



TORQ Analysis of Computer Support Specialists to Computer Operators

INPUT SECTION:

Transfer	Title	O* NET	Filters		
From Title:	Computer Support Specialists	15-1041.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Computer Operators	43-9011.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

OUTPUT SECTION:

Grand TORQ:


































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Ability TORQ				Skills TORQ				Knowledge TORQ			
Level		<div><div></div></div> 95		Level		<div><div></div></div> 83		Level		<div><div></div></div> 76	
Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
No Critical Gaps Recorded!				Time Management	54	5	70	Computers and Electronics	79	9	73
				Critical Thinking	65	1	71				
















LEVEL and IMPT (IMPORTANCE) refer to the Target Computer Operators. GAP refers to level difference between Computer Support Specialists and Computer Operators.

ASK ANALYSIS




Ability Level Comparison - Abilities with importance scores over 50

Description	Computer Support Specialists	Computer Operators	Importance
Oral Comprehension	64 	59 	68 
Written Comprehension	69 	55 	68 
Problem Sensitivity	55 	42 	68 
Information Ordering	57 	51 	68 
Oral Expression	62 	59 	65 
Deductive Reasoning	60 	50 	65 
Written Expression	55 	46 	62 
Inductive Reasoning	64 	42 	62 
Near Vision	59 	55 	62 
Speech Recognition	42 	42 	59 
Speech Clarity	44 	41 	56 










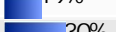






Skill Level Comparison - Abilities with importance scores over 69

Description	Computer Support Specialists	Computer Operators	Importance
Active Listening	66 	59 	83 
Reading Comprehension	70 	61 	76 
Critical Thinking	64 	65 	71 
Active Learning	62 	59 	71 
Time Management	49 	54 	70 

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Computer Support Specialists	Computer Operators	Importance
Computers and Electronics	70 	79 	73 

Experience & Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
Description	Computer Support Specialists	Computer Operators	Description	Computer Support Specialists	Computer Operators
10+ years	0%	0%	Doctoral	0%	0%
8-10 years	0%	0%	Professional Degree	0%	0%
6-8 years	0%	19%	Post-Masters Cert	0%	0%
4-6 years	0%	9%	Master's Degree	0%	4%
2-4 years	85% 	44% 	Post-Bachelor Cert	0%	0%
1-2 years	9% 	15% 	Bachelors	24% 	29% 
6-12 months	1% 	1% 	AA or Equiv	5% 	19% 
3-6 months	0%	0%	Some College	1% 	30% 
1-3 months	0%	0%	Post-Secondary Certificate	69% 	0%
0-1 month	0%	0%	High School Diploma or GED	0%	15% 
None	1% 	9% 	No HSD or GED	0%	0%

Computer Support Specialists

Computer Operators

Most Common Educational/Training Requirement:

Associate degree

Moderate-term on-the-job training

Job Zone Comparison

3 - Job Zone Three: Medium Preparation Needed

Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.

Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.

Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

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Tasks

Computer Support Specialists

Core Tasks

Generalized Work Activities:

- Interacting With Computers - Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Updating and Using Relevant Knowledge - Keeping up-to-date technically and applying new knowledge to your job.
- Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.
- Communicating with Persons Outside Organization - Communicating with people outside the organization, representing the organization to customers, the public, government, and other external sources. This information can be exchanged in person, in writing, or by telephone or e-mail.

Specific Tasks

Occupation Specific Tasks:

- Answer user inquiries regarding computer software or hardware operation to resolve problems.
- Conduct office automation feasibility studies, including workflow analysis, space design, or cost comparison analysis.
- Confer with staff, users, and management to establish requirements for new systems or modifications.
- Develop training materials and procedures, or train users in the proper use of hardware or software.
- Enter commands and observe system functioning to verify correct operations and detect errors.
- Inspect equipment and read order sheets to prepare for delivery to users.
- Install and perform minor repairs to hardware, software, or peripheral equipment, following design or installation specifications.
- Maintain records of daily data communication transactions, problems and remedial actions taken, or installation activities.
- Modify and customize commercial programs for internal needs.

Computer Operators

Core Tasks

Generalized Work Activities:

- Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Processing Information - Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Updating and Using Relevant Knowledge - Keeping up-to-date technically and applying new knowledge to your job.

Specific Tasks

Occupation Specific Tasks:

- Answer telephone calls to assist computer users encountering problems.
- Clear equipment at end of operating run and review schedule to determine next assignment.
- Enter commands, using computer terminal, and activate controls on computer and peripheral equipment to integrate and operate equipment.
- Help programmers and systems analysts test and debug new programs.
- Load peripheral equipment with selected materials for operating runs, or oversee loading of peripheral equipment by peripheral equipment operators.
- Monitor the system for equipment failure or errors in performance.
- Notify supervisor or computer maintenance technicians of equipment malfunctions.
- Operate spreadsheet programs and other types of software to load and manipulate data and to produce reports.
- Oversee the operation of computer hardware systems, including coordinating and scheduling the use of computer terminals and networks to ensure efficient use.
- Read job set-up instructions to determine equipment to be used, order of use, material such as disks and paper to be loaded, and control settings.



- Oversee the daily performance of computer systems.
- Prepare evaluations of software or hardware, and recommend improvements or upgrades.
- Read technical manuals, confer with users, or conduct computer diagnostics to investigate and resolve problems or to provide technical assistance and support.
- Read trade magazines and technical manuals, or attend conferences and seminars to maintain knowledge of hardware and software.
- Refer major hardware or software problems or defective products to vendors or technicians for service.
- Set up equipment for employee use, performing or ensuring proper installation of cables, operating systems, or appropriate software.
- Supervise and coordinate workers engaged in problem-solving, monitoring, and installing data communication equipment and software.

Detailed Tasks

Detailed Work Activities:

- adjust computer operation system
- assist co-workers with software problems
- communicate technical information
- conduct computer diagnostics to determine nature of problems
- conduct training for personnel
- configure computers in industrial or manufacturing setting
- consult with staff or users to identify operating procedure problems
- evaluate computer system user requests or requirements
- evaluate prototype computer software systems
- follow data security procedures
- follow data storage procedures
- identify appropriate software for project
- install computer programs
- install hardware, software, or peripheral equipment
- maintain or repair computers or related equipment
- monitor computer operation
- monitor operating conditions
- perform minor repairs to hardware, software, or peripheral equipment
- program computers using existing software
- provide technical computer training
- provide technical support to computer users
- recommend purchase or repair of

- Record information such as computer operating time, problems that occurred, and actions taken.
- Respond to program error messages by finding and correcting problems or terminating the program.
- Retrieve, separate and sort program output as needed, and send data to specified users.
- Supervise and train peripheral equipment operators and computer operator trainees.
- Type command on keyboard to transfer encoded data from memory unit to magnetic tape and assist in labeling, classifying, cataloging and maintaining tapes.

Detailed Tasks

Detailed Work Activities:

- communicate technical information
- ensure correct grammar, punctuation, or spelling
- follow data storage procedures
- load tapes, disks or paper into computers or peripherals
- maintain client-server database
- maintain or repair computers or related equipment
- maintain records, reports, or files
- monitor computer operation
- operate computer networks
- perform office equipment maintenance not requiring service call
- provide technical support to computer users
- read work order, instructions, formulas, or processing charts
- route computer output to specified users
- set computer controls or devices in data processing center
- test computer programs or systems
- use computers to enter, access or retrieve data
- use knowledge of mainframe computers
- use telephone communication techniques

Technology - Examples

Access software

- Citrix software

Application server software

- IBM WebSphere

Backup or archival software

- Data3 ENGWARD

- EMC Legato NetWorker



recommend purchase or repair of furnishings or equipment

- recommend software or hardware purchases
- select business applications for computers
- select software for clerical activities
- test computer programs or systems
- train workers in use of computer and related equipment
- train workers in use of equipment
- understand computer equipment operating manuals
- use computer networking technology
- use computers to enter, access or retrieve data
- use desktop publishing software
- use geographical information system (GIS) software
- use interpersonal communication techniques
- use knowledge of mainframe computers
- use relational database software
- use spreadsheet software
- use word processing or desktop publishing software
- write computer software, programs, or code

Technology - Examples

Access software

- Mac HelpMate

Administration software

- Element management software
- SolarWinds software

Authentication server software

- Password management software

Backup or archival software

- Backup and archival software
- Disaster recovery software
- Microsoft Volume Shadow Copy Service
- Symantec LiveState

Calendar and scheduling software

- Calendar and scheduling software

Configuration management software

- Automated installation software
- Configuration management software
- Deployment software

- Symantec Veritas NetBackup

Charting software

- Microsoft Office Visio

Data base management system software

- IBM DB2

- Oracle DBMS

- SPSS ShowCase Suite

- Sybase SQL Anywhere

- Teradata Enterprise Data Warehouse

Data base reporting software

- Business Objects Crystal Reports

Data base user interface and query software

- Microsoft Access

- Structured query language SQL

Development environment software

- Common business oriented language COBOL

Electronic mail software

- Email software

- IBM Lotus Notes

- Microsoft Exchange

- Microsoft Outlook

Enterprise resource planning ERP software

- SAP software

Filesystem software

- File transfer protocol FTP software

- IBM Tivoli NetView Distribution Manager

Helpdesk or call center software

- BMC Remedy IT Service Management Suite
- Hewlett-Packard HP OpenView Service Center

Internet browser software

- Web browser software

LAN software

- Local area network LAN software

Network conferencing software

- Microsoft SharePoint Server

Network monitoring software

- BMC PATROL software



- Patch management software

Data base management system software

- Database management software

Data base user interface and query software

- Database software

- Software asset management SAM software

Desk top communications software

- CrossTec NetOp Remote Control

- Remote control software

- Stac Software ReachOut

- Symantec pcAnywhere

Desk top publishing software

- Adobe Systems Adobe Distiller

Electronic mail software

- Email software

Filesystem software

- Desktop partitioning software

- Symantec Norton Utilities

Helpdesk or call center software

- Call center software

- Help desk software

Information retrieval or search software

- Information systems integration software

Internet browser software

- Internet browser software

Internet directory services software

- Active directory software

- Domain name system DNS software

- Network directory services software

License management software

- License management software

Network monitoring software

- Dartware InterMapper

Network operation system software

- Remote install server software

Operating system software

- Event log monitor software

- Microsoft Windows Pre-installation Environment

- Hewlett-Packard HP OpenView software

- IBM Tivoli OMEGAMON XE for CICS on z/OS

- Ipswitch WhatsUp Gold

- Novell NetWare

Object or component oriented development software

- Practical extraction and reporting language Perl

- Python

- Tandem advanced command language TACL

Object oriented data base management software

- IBM Informix

Office suite software

- Microsoft Office

Operating system software

- BMC CONTROL-M software

- BMC CONTROL-O

- CA 11 Workload Automation Restart and Tracking

- CA 7 Workload Automation

- CA Automation Point

- CA Unicenter TNG

- Disk operating system DOS software

- Hewlett-Packard HP OpenVMS

- IBM i

- IBM Tivoli Workload Scheduler

- Job control language JCL

- Linux

- Microsoft Windows

- MVS software

- Operating system monitoring software

- Solaris

- Sun Microsystems Java Enterprise System

- UNIX

- Windows Server

Spreadsheet software



- Operating system monitoring software

- Personal computer diagnostic software

Platform interconnectivity software

- Migration software

Presentation software

- Presentation software

Program testing software

- Defect tracking software

Spreadsheet software

- Spreadsheet software

Storage networking software

- Media storage management software

Transaction security and virus protection software

- Encryption software

- Virus scanning software

Word processing software

- Word processing software

Tools - Examples

- Computer tool kits

- Desktop computers

- MS-DOS-bootable disks

- Redundant array of independent disks RAID systems

- Mainframe computers

- Network analyzers

- Notebook computers

- Personal digital assistants PDA

- Power meters

- Punchdown tools

- Reflectometers

- Screwdrivers

- Digital tapes

- Wire crimpers

- Microsoft Excel

Storage networking software

- EMC AlphaStor

- Storage area network SAN software

Transaction server software

- Customer information control system CICS software

WAN switching software and firmware

- Wide area network WAN software

Word processing software

- Microsoft Word

Tools - Examples

- Check signers

- Computer servers

- High speed impact printers

- Backup drives

- Computer hard disk drives

- Computer printers

- Magnetic card readers

- Mainframe computers

- Computer terminals

- Modems

- Network routers

- Decollating equipment

- Personal computers

- Plotting printers

- Scanners

- Multi-line telephone systems

- Robotic tape libraries

- Computer tape drives

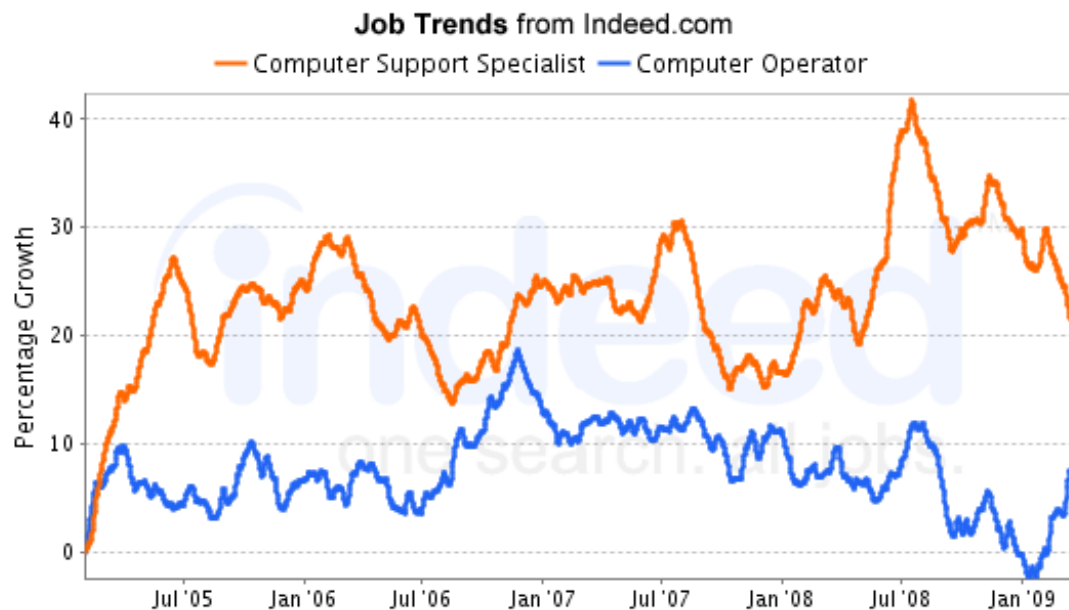
Labor Market Comparison



Description	Computer Support Specialists	Computer Operators	Difference
Median Wage	\$ 40,200	\$ 33,120	\$ (7,080)
10th Percentile Wage	\$ 27,070	\$ 24,210	\$ (2,860)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 47,830	\$ 40,520	\$ (7,310)
90th Percentile Wage	\$ 55,380	\$ 46,810	\$ (8,570)
Mean Wage	\$ 40,600	\$ 34,180	\$ (6,420)
Total Employment - 2007	1,670	230	-1,440
Employment Base - 2006	1,690	252	-1,438
Projected Employment - 2016	1,778	176	-1,602
Projected Job Growth - 2006-2016	5.2 %	-30.1 %	-35.4 %
Projected Annual Openings - 2006-2016	61	4	-57

National Job Posting Trends

Trend for Computer Support Specialists

Trend for
Computer
OperatorsData from [Indeed](http://Indeed.com)

Recommended Programs

No program data for the occupation.

Maine Statewide Promotion Opportunities for Computer Support Specialists

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
15-1041.00	Computer Support Specialists	100	3	1,670	\$40,200.00	\$0.00	5%	61
27-3042.00	Technical Writers	85	4	50	\$46,060.00	\$5,860.00	-8%	2
17-3012.01	Electronic Drafters	82	3	90	\$44,860.00	\$4,660.00	-16%	3
15-1051.00	Computer Systems Analysts	82	4	1,650	\$69,340.00	\$29,140.00	20%	78
15-1071.00	Network and Computer Systems Administrators	81	4	1,070	\$57,690.00	\$17,490.00	18%	44
13-2053.00	Insurance Underwriters	81	3	460	\$56,090.00	\$15,890.00	-1%	12
15-1021.00	Computer Programmers	81	4	720	\$58,240.00	\$18,040.00	-12%	16
17-3023.03	Electrical Engineering Technicians	81	3	430	\$45,180.00	\$4,980.00	-20%	9
13-1031.01	Claims Examiners, Property and Casualty Insurance	80	3	1,570	\$49,360.00	\$9,160.00	3%	44
13-1071.01	Employment Interviewers	80	3	610	\$41,200.00	\$1,000.00	10%	19
25-1021.00	Computer Science Teachers, Postsecondary	80	5	120	\$52,380.00	\$12,180.00	14%	4
13-1032.00	Insurance Appraisers, Auto Damage	80	3	40	\$49,950.00	\$9,750.00	5%	1
15-1061.00	Database Administrators	80	4	300	\$60,260.00	\$20,060.00	20%	11
13-1023.00	Purchasing Agents, Except Wholesale, Retail, and Farm Products	79	3	920	\$45,210.00	\$5,010.00	-2%	21
23-2011.00	Paralegals and Legal Assistants	79	3	1,010	\$40,260.00	\$60.00	15%	30

Top Industries for Computer Operators

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Computer systems design and related services	541500	6.16%	8,013	7,032	-12.24%
Depository credit intermediation	522100	5.62%	7,303	4,840	-33.73%



Employment services	561300	5.51%	7,157	5,888	-17.73%
Management of companies and enterprises	551100	5.29%	6,880	5,155	-25.07%
Colleges, universities, and professional schools, public and private	611300	4.83%	6,285	4,570	-27.28%
General medical and surgical hospitals, public and private	622100	4.27%	5,550	3,994	-28.04%
Local government, excluding education and hospitals	939300	4.09%	5,318	3,883	-26.98%
State government, excluding education and hospitals	929200	3.33%	4,328	2,761	-36.22%
Grocery stores	445100	2.15%	2,790	1,979	-29.08%
Accounting, tax preparation, bookkeeping, and payroll services	541200	1.90%	2,466	1,901	-22.91%
Management, scientific, and technical consulting services	541600	1.53%	1,984	2,302	16.04%
Professional and commercial equipment and supplies merchant wholesalers	423400	1.53%	1,990	1,508	-24.23%
Office administrative services	561100	1.33%	1,733	1,428	-17.59%
Direct insurance (except life, health, and medical) carriers	524120	1.29%	1,672	1,136	-32.06%
Postal service	491100	1.26%	1,636	1,083	-33.83%

Top Industries for Computer Support Specialists

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Computer systems design and related services	541500	15.54%	85,860	104,333	21.51%
Colleges, universities, and professional schools, public and private	611300	5.81%	32,072	35,880	11.87%
Elementary and secondary schools, public and private	611100	5.16%	28,526	30,060	5.38%
Management of companies and enterprises	551100	4.54%	25,054	28,882	15.28%
Software publishers	511200	3.79%	20,951	24,278	15.88%
Employment services	561300	2.98%	16,453	20,824	26.56%
Local government, excluding education and hospitals	939300	2.89%	15,984	17,956	12.34%
Professional and commercial equipment and supplies merchant wholesalers	423400	2.58%	14,246	14,946	4.91%
Federal government, excluding postal service	919999	2.56%	14,152	13,378	-5.47%
Electronics and appliance stores	443100	2.09%	11,573	10,577	-8.61%
State government, excluding education and hospitals	929200	2.06%	11,375	11,162	-1.87%
Internet service providers and Web search portals	518100	1.98%	10,935	7,752	-29.11%

General medical and surgical hospitals, public and private	622100	1.92%	10,607	11,743	10.71%
Management, scientific, and technical consulting services	541600	1.88%	10,402	18,571	78.52%
Depository credit intermediation	522100	1.84%	10,158	10,357	1.95%